

### Claims

What is claimed is:

- 5           1.     A probiotic composition for the reduction of bacterium in an aquatic environment comprising:  
              an isolated bacteria of the genus *Bacillus*.
2.     The composition of claim 1 wherein the bacteria is further defined as  
10    *Bacillus cereus*.
3.     The composition of claim 1 wherein the isolated *Bacillus* is strain EHC 100 having ATCC deposit accession number \_\_\_\_\_.
- 15           4.     The composition of claim 1 wherein the bacterium being reduced is a pathogenic bacterium selected from the group consisting essentially of *Streptococcus*, *Psuedomonas* and *Aeromonas*.
5.     The composition of claim 3 wherein the bacterium being reduced is a  
20    pathogenic bacterium selected from the group consisting essentially of *Streptococcus*, *Psuedomonas* and *Aeromonas*.
6.     The composition of claim 1 further comprising from 2 to 5% sodium.
- 25           7.     The composition of claim 2 wherein the isolated *Bacillus cereus* has a density of from  $4 \times 10^8$  to  $6 \times 10^8$  colony forming units per milliliter.
8.     The composition of claim 7 wherein the colony forming units of the  
30    *Bacillus cereus* are less than 99% spores.

9. The composition of claim 7 wherein the colony forming units of the *Bacillus cereus* are less than 80% spores.

10. The composition of claim 1 wherein the aquatic environment is a koi pond.

11. The composition of claim 1 wherein the aquatic environment is saltwater.

12. The composition of claim 1 wherein the aquatic environment is a shrimp pond.

13. The composition of claim 1 wherein the aquatic environment is freshwater.

14. A method for reducing levels of pathogenic bacteria in an aquatic environment comprising:

adding a sufficient amount of the composition of claim 2 to the aquatic environment to cause a reduction in the pathogenic bacteria.

15. The method of claim 14 further comprising:

determining the levels of pathogenic bacteria in the aquatic environment before and after addition of the composition; and

adding a second dose of the composition to the aquatic environment to cause a further reduction in the pathogenic bacteria.

16. A method for reducing levels of pathogenic bacteria in an aquatic environment comprising:

adding a sufficient amount of the composition of claim 3 to the aquatic environment to cause a reduction in the pathogenic bacteria.

17. The method of claim 16 further comprising:

determining the levels of pathogenic bacteria in the aquatic environment before and after addition of the composition; and

adding a second dose of the composition to the aquatic environment to cause a further reduction in the pathogenic bacteria.

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18. The method of claim 14 wherein 20 to 60 milliliters of the composition having from  $4 \times 10^8$  to  $6 \times 10^8$  of the *Bacillus cereus* is added per 1,000 gallons of aquatic environment.

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19. The method of claim 16 wherein 20 to 60 milliliters of the composition having from  $4 \times 10^8$  to  $6 \times 10^8$  of the EHC 100 is added per 1,000 gallons of aquatic environment.

20. The method of claim 14 wherein the aquatic environment is a koi pond.

21. The method of claim 16 wherein the aquatic environment is a koi pond.

22. The method of claim 14 wherein the aquatic environment is saltwater.

23. The method of claim 16 wherein the aquatic environment is saltwater.

24. The method of claim 14 wherein the aquatic environment is freshwater.

25. The method of claim 16 wherein the aquatic environment is freshwater.

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26. A method for reducing the levels of fish morbidity in an aquatic environment comprising:

adding a sufficient amount of the composition of claim 2 to the aquatic environment to cause a reduction in pathogenic bacterium in the aquatic environment.

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27. A method for reducing the levels of fish morbidity in an aquatic environment comprising:

adding a sufficient amount of the composition of claim 3 to the aquatic environment to cause a reduction in pathogenic bacterium in the aquatic environment.

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28. The method of claim 26 further comprising:

determining the levels of pathogenic bacteria in the aquatic environment before and after addition of the composition;

10 determining the approximate number of fish in the aquatic environment before and after the addition of the composition to the aquatic environment; and

adding a second dose of the composition to the aquatic environment to cause a further reduction in the pathogenic bacteria.

29. The method of claim 27 further comprising:

determining the levels of pathogenic bacteria in the aquatic environment before and after addition of the composition;

determining the approximate number of fish in the aquatic environment before and after the addition of the composition to the aquatic environment; and

20 adding a second dose of the composition to the aquatic environment to cause a further reduction in the pathogenic bacteria.

30. The method of claim 26 wherein the fish is *Tilapia*.

31. The method of claim 27 wherein the fish is *Tilapia*.

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32. The method of claim 26 wherein 20 to 60 milliliters of the composition having from  $4 \times 10^8$  to  $6 \times 10^8$  of the *Bacillus cereus* is added per 1,000 gallons of aquatic environment.

33. The method of claim 27 wherein 20 to 60 milliliters of the composition having from  $4 \times 10^8$  to  $6 \times 10^8$  of the EHC 100 is added per 1,000 gallons of aquatic environment.

5 34. The method of claim 26 wherein the aquatic environment is a koi pond.

35. The method of claim 27 wherein the aquatic environment is a koi pond.

10 36. The method of claim 26 wherein the aquatic environment is a shrimp pond.

37. The method of claim 27 wherein the aquatic environment is a shrimp pond.

15 38. The method of claim 26 wherein the aquatic environment is saltwater.

39. The method of claim 27 wherein the aquatic environment is saltwater.

20 40. The method of claim 26 wherein the aquatic environment is freshwater.

41. The method of claim 27 wherein the aquatic environment is freshwater.

42. A method for treating fish infected with a pathogenic bacteria in an aquatic environment comprising:

25 adding a sufficient amount of the composition of claim 3 to the aquatic environment to cause a reduction in the percentage of fish infected with the pathogenic bacterium.

30 43. A method for treating shellfish infected with a pathogenic bacteria in an aquatic environment comprising:

adding a sufficient amount of the composition of claim 3 to the aquatic environment to cause a reduction in the percentage of shellfish infected with the pathogenic bacterium.